

Section 2. WATERSHED ACTIVITIES

2.1 Salton Sea Transboundary Watershed

A. Area Description

The Salton Sea Transboundary Watershed is the priority watershed for purposes of the WMI. It is located in the Sonoran desert in southeast California, encompasses one-third of the Colorado River Basin Region (about 8,360 square miles), and contains five of the six impaired surface water bodies in Region 7. Hydrologic Units in the Salton Sea Transboundary Watershed are listed in Appendix K. The California Unified Watershed Assessment (UWA) * conducted in 1998 identified the Salton Sea Transboundary Watershed in Category I (i.e. impaired). Water from the Colorado River has created an irrigated agricultural ecosystem throughout the watershed. Wildlife and aquatic species are dependent on habitat created and maintained through the use of water for agricultural purposes. Major waterbodies in this watershed include the Salton Sea, Alamo River, New River, Imperial Valley Agricultural Drains, and Coachella Valley Stormwater Channel. San Felipe Creek and Salt Creek also are in this watershed and provide critical habitat for the endangered desert pupfish. Aquatic and wildlife habitat uses that occur incidental to the importation of water to the desert are designated beneficial uses in the Region's Water Quality Control Plan (Basin Plan).

The Salton Sea is a saline lake in a closed basin. It is about 35 miles long and 9 to 15 miles wide with approximately 360 square miles of surface water area and 105 miles of shoreline. The surface of the Sea is approximately 227 feet below mean sea level (MSL). In 1924 and 1928, President Coolidge issued Public Water Reserve Order Numbers 90 and 114, respectively, to withdraw 123,360 acres of public land at an elevation of 220 feet below MSL, in and surrounding the Salton Sea. These lands were designated as a repository to receive and store agricultural, surface, and subsurface drainage waters from Imperial and Coachella Valleys. The State of California designated the Sea for this same purpose in 1968.

Current flow to the Salton Sea is about 1.3-million acre-feet per year, which is approximately equal to the rate of evaporation. Currently, the Sea is 28% saltier than the ocean (total dissolved solids concentration of 44,000 milligrams per liter), with salinity predicted to increase approximately 1% per year. The Sea is also classified as a hyper-eutrophic lake due to high concentrations of nutrients. Salton Sea supports a National Wildlife Refuge and is a critical stop on the Pacific Flyway for migrating birds, including several state and federally listed endangered and threatened species. The Salton Sea National Wildlife Refuge was established in 1930 to preserve wintering habitat for millions of waterfowl and migratory birds. Catastrophic die-offs of birds and fish between 1992 and 2001 indicate the Sea has critical ecological issues that jeopardize beneficial uses.

The Salton Sea is sustained largely by agricultural runoff from the Imperial and Coachella valleys, which are irrigated with Colorado River water diverted through the All American and Coachella canals. As a result of water transfers that will take place to satisfy the Colorado River Quantification Settlement Agreement (QSA), the inflows of agricultural runoff that represent the Sea's main source of fresh water will decrease, therefore lowering the elevation of the Sea.

* The California UWA was developed and implemented in response to the federal Clean Water Action Plan released in February 1998. The UWA was a collaborative process between the State and the United States Environmental Protection Agency (USEPA) and was developed to guide allocation of new federal resources for watershed protection.

State legislation to implement the QSA was enacted in 2003. The legislation is contained in three bills – SB 277 (Ducheny), SB 317 (Kuehl), and SB 654 (Machado) and tasks the Department of Water Resources (DWR), in coordination with the Department of Fish and Game, to prepare a Salton Sea ecosystem restoration study. The study is to be conducted in consultation with a legislatively mandated advisory committee and with the Salton Sea Authority (SSA) -- a Joint Powers Authority comprised of representatives from Imperial and Riverside Counties, the Coachella Valley Water District, the Imperial Irrigation District and the Torres-Martinez Tribe of Cahuilla Indians.

B. Overview of Water Quality Issues

The most significant water quality problems in the Salton Sea Transboundary Watershed are the Salton Sea and its major tributaries – the New and Alamo Rivers, and Imperial Valley Agricultural Drains (hereafter “Imperial Valley Drains”). Water quality of the Coachella Valley Stormwater Channel is also a concern.

The New River originates in the City of Mexicali, Mexico. It flows approximately 20 miles through Mexicali, crosses the International Border, travels through Calexico, and then northward to the Salton Sea (about 60 miles). Flow at the International Border is about 181 to 362 cubic feet per second (cfs) [118,220 to 264,530 acre-feet per year (AFY)], and 553 to 705 cfs (411,770 to 512,350 AFY) at the outfall to the Salton Sea. The New River receives urban runoff, agricultural runoff, and untreated and partially treated municipal industrial wastes from Mexicali Valley. In the United States, the river receives urban runoff, agricultural runoff, treated industrial wastes, and treated, disinfected domestic wastes from Imperial Valley. It also receives approximately 11 cfs (7,970 AFY) of treated wastewater from eight NPDES Imperial Valley wastewater treatment facilities. Urban runoff, and domestic and municipal wastes contribute high concentrations of pathogens to the New River and threaten public health, particularly near the International Border. The flow at the border also contains volatile organic compounds typical of petroleum products and industrial discharges.

The Alamo River originates in Mexico approximately two miles south of the International Border. It flows northward about 50 miles to the Salton Sea. The Alamo River is dominated by agricultural return flows from Imperial Valley. The flow at the International Border is 2 to 4 cfs (1450 to 2900 AFY), and 680 to 902 cfs (499,020 to 654,130 AFY) at the outfall to the Salton Sea. The Alamo also receives 15 to 27 cfs (10,867 to 19,200 AFY) of treated wastewater from point sources in Imperial Valley. Mexico agreed to eliminate dry weather flows to the Alamo River, however that commitment remains unfulfilled.

The Imperial Valley Agricultural Drain System comprises over 1,450 miles of constructed surface drains that discharge to the Alamo River, New River, and Salton Sea. The drains transport agricultural runoff from Imperial Valley and range from 830,841 to 1,153,827 AFY, averaging 994,812 AFY. Of this amount, 44-48% is tailwater, 27-31% percent is tilewater, 13% percent is seepage, and 12% is operational spill. The resulting mix of tailwater (surface runoff), tilewater (subsurface drainage), and seepage, contains pesticides, nutrients, selenium, and silt in concentrations that exceed water quality standards.

Agricultural drain waters from Imperial Valley comprise over 70% of the freshwater flows to the Salton Sea. Because the Sea is enclosed, salts and nutrients accumulate, and cause hyper-eutrophic conditions and other ecological problems. High salinity cannot be addressed strictly from a regulatory stance; rather, a coordinated approach aimed at stabilizing and/or restoring salinity to levels that maintain beneficial uses and water quality objectives must be implemented. The Salton Sea Authority has conducted pilot studies to evaluate solutions to address the high salinity.

The approved petition to transfer water rights from the Imperial Irrigation District to San Diego County has significant water quality implications in the Salton Sea Transboundary Watershed. The transfer will

move as much as 30 million acre-feet of water from farms to cities in Southern California over the next 75 years. The quality of agricultural discharges will be impacted depending on methods employed to attain water conservation in Imperial Valley. The levels of some pollutants will probably decrease, while others increase. Selenium is of particular concern given that it is discharged mainly in tilewater (subsurface drainage). The Imperial Valley Agricultural Drains, the Alamo River and the Salton Sea are impaired by selenium. If water conservation practices significantly reduce tailwater (surface runoff) discharges, the concentration of selenium in drains may increase dramatically. Studies by the U.S. Fish and Wildlife Service and the Department of Interior National Irrigation Water Quality Program indicate that fish and wildlife, including fish-eating birds and the endangered desert pupfish, are currently at reproductive risk from selenium pollution¹. With decreased water flows to the Sea, the shoreline will regress, exposing lakebed sediments and their contaminants (e.g. selenium) to erosion and aerial dispersion.

Bacterial pollution in the Coachella Valley Stormwater Channel (CVSC), presumably from urban run-off, is another surface water concern in the Salton Sea Transboundary Watershed. The CVSC is currently being monitored for TMDL development.

C. Total Maximum Daily Loads

Five of the six impaired waters on the Clean Water Act Section 303(d) list are located in the Salton Sea Transboundary Watershed, and include Salton Sea, New River, Alamo River, Imperial Valley Drains, and Coachella Valley Stormwater Channel.

Most pollutants scheduled for TMDL development and implementation are NPS pollutants from agricultural practices in Imperial Valley. The Regional Board adopted the Alamo River sedimentation/siltation TMDL in June 2001, which was subsequently approved by State Board in January 2002, the Office of Administrative Law (OAL) in May 2002, and USEPA in June 2002. TMDL oversight and tracking for the Alamo River sedimentation/siltation began in 2003. The Regional Board adopted the New River sedimentation/siltation TMDL in June 2002, which State Board approved in November 2002, OAL in January 2003, and USEPA in March 2003. The Regional Board adopted the New River pathogen TMDL in October 2002, which State Board approved in March 2002, OAL in May 2002, and USEPA in August 2002.

Resource demand for TMDL related issues is expected to increase given the urgency for TMDL development. This demand will persist until all TMDLs are achieved. Many scheduled for Region 7 are more technically challenging than the three already developed, and will require more resources. Some level of oversight will be necessary following attainment of TMDL targets. Periodic water quality monitoring will provide feedback for tracking and oversight. Challenges and petitions from dischargers on individual TMDLs are likely, and will impact staff time and resources. Implementation of the three TMDLs is straining the available TMDL development resources.

TMDLs for Imperial Valley Surface Waters Impaired by Pollutants of Agricultural Origin

Pollutants of agricultural origin impair all major surface waters in Imperial Valley. Region 7 is using a “phased” and “geographically nested” approach to develop and implement TMDLs for these waters.

¹ Source: Bennet, Jewell, *Biological Effects of Selenium and Other Contaminants associated with Irrigations Drainage in the Salton Sea Area, California 1992-1994*, National Irrigation Water Quality Program, December 1998.

USEPA Guidance⁶ allows for a “phased” approach when there is insufficient data to develop the TMDL. To implement a phased approach, the numeric target, load allocations, waste load allocations, and margin of safety must be set; however, numeric values may be revised based on new data. Meanwhile, dischargers can implement efforts to reduce pollutant loadings. Implementation efforts can be measured by: water quality improvement; area of land covered by Management Practices (MPs); number of MPs implemented, or other appropriate measures. The phased approach provides for pollution reduction without the delay of data collection.

The “geographically nested” approach analyzes the entire affected watershed under an umbrella program. The umbrella program is divided into a series of nested programs at smaller, more manageable scales (e.g. drainage basins within sub-regional watersheds) for purposes of monitoring, source identification, and identification/implementation of solutions, and participation by contributing sources and the public.

The phased or geographically nested approach can develop solutions on a watershed scale. The Imperial County Farm Bureau (ICFB) Watershed Program is an example of this approach. Early in the TMDL development process, ICFB offered to implement the California Farm Bureau Federation’s NPS Initiative. ICFB has developed a watershed plan with schedules, milestones, and deliverables for the development and implementation of agricultural NPS pollution controls valley-wide. This plan may serve as a model for outreach to agricultural producers and landowners in Imperial Valley. Activities in the ICFB include:

1. Outreach to growers and landowners regarding the TMDL process, and MPs or other controls.
Specific goals:
 - Identify growers and landowners regardless of Farm Bureau membership.
 - Identify local Farm Bureau leaders to direct watershed working groups.
 - Provide information regarding the TMDL process and decisions resulting from this process.
 - Provide information on recommended MPs and other controls.
 - Coordinate with technical assistance agencies to facilitate MP implementation.
2. Outreach to encourage growers to implement MPs or other controls.
Specific goals:
 - Develop watershed working groups and demonstration MP projects within each sub-watershed.
 - Create model work groups of key growers in each affected watershed, to lead growers in forming working groups for MP controls consistent with TMDL implementation.
 - Develop resource referral materials to link growers to sources of technical assistance.
 - Cooperate with technical assistance agencies to provide workshops and encourage attendance.
3. Coordination with Regional Board staff to develop a process for watershed groups to track and report implementation and MP effectiveness.
Specific Goals:
 - Develop a process for tracking and reporting implementation of MPs to the Regional Board, subject to Regional Board approval.
 - Implement compiled tracking and reporting system for working groups and encourage adoption throughout watershed.
 - Work with Regional Board and technical assistance agencies to develop self-monitoring protocols for landowner/growers to supplement agency monitoring.

⁶ Guidance for Water-Quality-based Decisions: The TMDL Process, USEPA, 1991

To further assist in the achievement of the above listed goals, the ICFB has developed a website that can be accessed at www.ivtmdl.com.

New River International Pollution TMDLs

The Regional Board is addressing water quality problems in the New River caused by activities in the United States through development and implementation of TMDLs (e.g. agricultural drainage). Staff will continue to work cooperatively with the USEPA, USIBWC, and Mexico to control New River pollution. Nevertheless, the Regional Board expects that USEPA and/or USIBWC will ensure that discharges of waste from Mexico into the New River will not violate TMDLs for the River.

Salton Sea TMDLs

TMDLs are not effective to address all of the Sea's main problems. For example, the salinity impairment requires an engineered project. Selenium is best addressed at its sources in Colorado. Staff is focusing TMDL efforts for the Sea on reducing the nutrient load. Significant resources will be needed to encourage implementation of NPS pollution controls by the agricultural community, and for regulatory oversight.

Proposed TMDL Development Activities for FY 2004-2005

- Continue development of the pathogen TMDL for Palo Verde Outfall Drain
- Continue development of nutrient TMDL for the Salton Sea
- Continue development of pathogen for Coachella Valley Storm Water Channel
- Continue development of dissolved oxygen TMDL for New River
- Continue development of trash TMDL for the New River
- Begin development of VOC TMDL for the New River

Proposed TMDL Implementation Activities for FY 2004-2005

- Implement Alamo River silt TMDL
- Implement New River pathogen TMDL
- Implement New River silt TMDL
- Implement Imperial Valley Agricultural Drains silt TMDL

D. NPS Control

Efforts to Address NPS Pollution in the Colorado River Basin Region

In the past, Regional Board regulation of NPS discharges was mainly at the Tier 1 ("Self-Determined") level. In 1992, the Regional Board adopted an "Agricultural Drain Management Report" (ADM Report, March 1992). This report identified the major drainage entities (Imperial Irrigation District, Palo Verde Irrigation District, Coachella Valley Water District, and Bard Water District), and provided a time schedule for the development of MPs for drainage entities (i.e. water districts). The ADM Report also included a Regional Board surveillance and monitoring program that was dependent on the availability of funds. Inadequate progress toward meeting the milestones in the ADM Report led to a December 1993 letter from the Regional Board's Executive Officer to the Imperial Irrigation District (IID), requesting that IID take "accelerated action to address degraded water quality conditions in Imperial Valley drainage ways." As a result, IID entered into a staff-level agreement entitled the "Drain Water Quality

Improvement Plan” (DWQIP -- June 7, 1994) that focused on silt load reduction. In the DWQIP, IID agreed to:

- submit a list of applicable MPs and a detailed work plan describing a program to test the pollution prevention ability and cost effectiveness of two of the identified, on-farm, sediment reduction MPs;
- submit a proposal to conduct MP education and outreach to agricultural producers, and following Regional Board approval, implement that program in a timely fashion;
- implement a drain water quality monitoring program, including inflow monitoring, drain water monitoring, chronic toxicity testing, and biological and sediment testing, and
- submit a report delineating the major discharges to the drain system.

Of these tasks, IID successfully completed the MP report, the main drain report, and most components of the drain water quality monitoring program (1996 through 1998). IID implemented one MP project, a sedimentation basin; however, they were unable to quantify its effectiveness. Likewise, the water quality and flow monitoring program could not adequately quantify flows and pollutant contributions of “minor drains,” which contribute about 60% of the flow to the Alamo River (figure 2). IID revised its DWQIP to include water quality monitoring and flow gauging at a statistically significant number of minor drain stations to characterize temporal and spatial loading of pollutants.

TMDL priorities and the revised State NPS Management Plan have changed the approach in dealing with NPS problems. The adopted TMDL for the Alamo and New Rivers established revised requirements for the IID and farmers in the Imperial Valley to address the silt impairments they are causing.

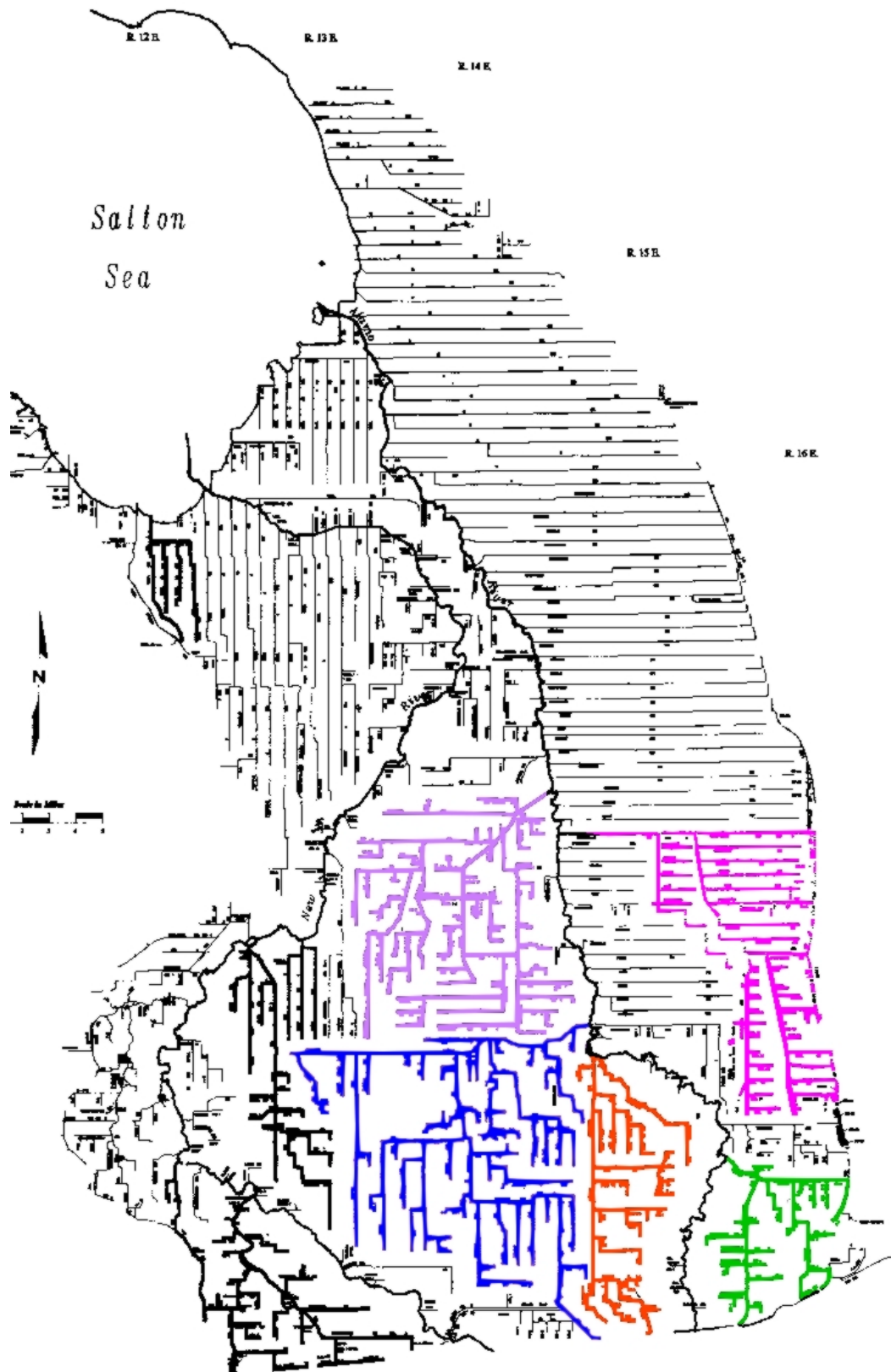


Figure 2. IID Drain System.
"Major drains" for the Alamo River watershed are shown in color

E. New River/Mexicali Sanitation Project

Organizations and agencies in the U.S. (USEPA, USIBWC, RWQCB, SWRCB, Imperial County, IID, etc.), and their counterparts in Mexico (CILA, CNA, CESP, etc.) are collaborating in the New River/Mexicali Project to address New River pollution from Mexicali Valley. The USEPA (through the U.S. Section of the IBWC), is the lead agency for the U.S., and includes Policy and Technical Advisory Committees. The RWQCB and SWRCB are members of these committees. Current binational proceedings influence development and implementation of TMDLs, and are part of the TMDL activities for the New River. A new wastewater treatment facility is being built in Mexicali with binational funds to handle the raw sewage currently being discharged by Mexico into the New River (estimated at up to 15 million gallons per day). It may be necessary for the U.S. to pursue alternative pollution controls at the International Border, if current New River pollution control efforts become ineffective.

F. Ground water

High quality ground water is a precious commodity in the desert that warrants the highest protection. Recent population growth in Region 7 has impacted water quality, and supply/demand. Three significant water quality concerns in Region 7 include nitrate pollution in Coachella Valley, Lucerne Valley, and Desert Hot Springs.

Ground water resources are critical for sustaining the urban population for Region 7, given the lack of surface waters. The Coachella Valley Aquifer provides 25 billion gallons of water annually to 62,000 homes and businesses in the Valley. The Coachella Valley Water District (CVWD) operates about 83 wells to meet the demands of its customers. These wells range from 900 to 1,300 feet in depth. Ground water generally occurs within 250 feet of the ground surface. CVWD also provides water for agricultural irrigation. Other significant ground water resources used for municipal supply include the Desert Hot Springs aquifer, and the Mission Springs aquifer.

To compensate for aquifer overdraft, CVWD has recharged the Upper Coachella Valley aquifer for over twenty years with water from the Colorado River imported via the Colorado River aqueduct maintained by Metropolitan Water District. There is growing concern that this activity may degrade the quality of the Coachella Valley aquifer by adding salts, perchlorate, hexavalent chromium and other pollutants found in the Colorado River.

- LUCERNE VALLEY

Agricultural practices, septic systems, and disposal of domestic wastewater via evaporation/percolation ponds operated by the Big Bear Area Regional Wastewater Agency (BBARWA), are the suspected sources of nitrate pollution to the Lucerne Valley aquifer. The full extent of the plume has not been delineated, however it covers several miles and threatens at least 15 private supply wells. Regional Board staff lack the funds to develop a ground water monitoring program to determine the extent of pollution, but will continue working with BBARWA to address nitrates in Lucerne Valley.

- COACHELLA VALLEY

Nitrates also impact the Coachella Valley ground water aquifer, the sole drinking water source for most of Coachella Valley. Several municipal wells in Palm Springs operated by the Desert Water Agency have restricted use due to nitrate concentrations that exceed the State Maximum Contaminant Level of 45 mg/l by almost 100 percent. Individual domestic septic tanks and leach fields, water recycling, fertilizer application, and evaporation/percolation ponds are likely sources of nitrate contaminants.

- CATHEDRAL CITY COVE AREA

Assembly Bill (AB) 358 was signed into law by Governor Davis in November 2001 to protect the health and safety of residents consuming the ground water of the Upper Coachella Valley Groundwater Basin. Assembly Bill 358 mandates the Regional Board to adopt a basin plan amendment prohibiting the discharge of wastewater from septic systems into the ground in the Cove area of Cathedral City on and after January 1, 2012. The Bill also directs SWRCB to assist Cathedral City to identify and obtain available State and Federal funds to facilitate compliance with the prohibition. The Basin Plan amendment was adopted by the Regional Board November 13, 2002, and subsequently approved by the State Board on May 21, 2003 and by OAL on June 15, 2003. Pursuant to Section 13225 of the Water Code, the City of Cathedral City must submit annual reports to the Regional Board beginning May 21, 2004 describing actions taken by the City or any person or entity to achieve compliance with the subject prohibition by January 1, 2012.

- DESERT HOT SPRINGS AND MISSION SPRINGS

The Desert Hot Springs and Mission Springs aquifers are the subject of Senate Bill (SB) 1852, passed in 1998. Senate Bill 1852 requires the RWQCB to prohibit wastewater discharges from existing or new septic systems on parcels of less than 1/2 acre that overlie the Mission Creek and Desert Hot Springs aquifers, if a sewer system is available within 200 feet of the property. The Regional Board adopted a basin plan amendment to comply with SB 1852 on March 30, 2004.

Two phases of sewer line installation are planned for areas in Desert Hot Springs impacted by the subject basin plan amendment. Mission Springs Water District (MSWD) has completed sewer line installation for nearly 100 % of Phase 1. A contract for Phase 2 is currently being processed at State Board. Staff will continue to assist stakeholders and MSWD with the Proposition 13 grant application process, as resources permit.

G. Stakeholder Involvement

One cornerstone of the Watershed Management approach is stakeholder involvement. This requires a commitment of active participation by staff for extended periods of time. Staff participation may facilitate attaining water quality goals where direct regulatory authority and/or program resources are not available. In general, stakeholder groups in Region 7 are well organized, and highly motivated to address serious water quality concerns in the Region.

Stakeholder groups in the priority watershed include:

- Salton Sea Nutrient TMDL Technical Advisory Committee (SS Nutrient TMDL TAC) - A stakeholder group created in 2001 by RWQCB staff to assist in development of the Salton Sea Nutrient TMDL. It includes representatives from IID; federal, state, and local governments; ICFB; Riverside County Farm Bureau; other private-sector agricultural interests in Imperial and SSA, and Torres Martinez Desert Cahuilla Indians. The TMDL TAC is focused on development of TMDL components and providing technical input on implementation.
- Sediment TMDL Technical Advisory Committee (Sediment TMDL TAC) - A stakeholder group created in 1998 by Regional Board staff to assist in development of sediment TMDLs for sediment-impaired water bodies in Imperial Valley. This TMDL TAC included representatives from: IID; federal, state, and local governments; ICFB; private-sector agricultural interest groups in Imperial Valley; U.S. Fish and Wildlife Service; BOR; SSA, and Audubon Salton Sea Task Force. The TMDL TAC focused on participating in the TMDL process with Regional Board staff, and providing technical input on TMDL development and implementation.

- SSA—A major stakeholder group in the priority watershed. The Salton Sea Authority is a joint powers agency chartered by the State of California by a Joint Powers Agreement on June 2, 1993 for the purpose of ensuring the beneficial uses of the Salton Sea. The Authority is comprised of the following cooperating agencies: The Coachella Valley Water District, The Imperial Irrigation District, Riverside County, Imperial County, and the Torres Martinez Tribe of Desert Cahuilla Indians. The Authority was formed to work with California state agencies, federal agencies, and the Republic of Mexico to develop programs that would continue beneficial use of the Salton Sea.
- Citizen's Congressional Task Force on the New River—This group, which includes representatives from Desert Wildlife Unlimited, IID, Imperial County, US Fish and Wildlife Service, Ducks Unlimited, BOR, and California Department of Fish and Game, was organized in 1997 to address water quality and habitat issues along the New and Alamo Rivers. The Task Force was instrumental in constructing an aeration structure within one mile of Calexico to add dissolved oxygen to the New River, and with constructing two wetlands; a 68 acre wetland located west of Imperial, and a 6-acre wetland located in Brawley, west of Legion Road. Both wetlands are designed to improve water quality flowing into the Salton Sea. The Task Force is also initiating reconnaissance studies to identify future wetland sites along the New and Alamo Rivers from the International Boundary to the Salton Sea.
- Calexico New River Committee – Frustrated by the lack of progress addressing New River pollution, concerned citizens and officials in the Calexico area created the Calexico New River Committee. This Committee is dedicated to eliminating the negative impacts the New River has on Calexico and Imperial Valley, and has consolidated community and political support for the New River Public Protection Project. Improvements proposed by the Public Protection Project include: upgrades to the Calexico wastewater treatment plant; enclosure of the New River in the developed area of Calexico; a trash screen in the river at the border; habitat improvements, and construction of open space/recreational facilities along the river channel.
- Binational Technical Committee for New River/Mexicali Sanitation Program – This group is charged with overseeing the binational project being implemented in Mexicali to address New River pollution at the Border. The US BTC members are USEPA, USIBWC, Regional Board, SWRCB, Imperial County, and the IID. The Mexican BTC members include the Mexican Section of IBWC (a.k.a. CILA), Mexico's Water Commission (a.k.a. CNA), Baja California's Public Services Department (a.k.a. CESPM), and the Municipality of Mexicali.
- Groundwater Guardians – The City of Desert Hot Springs has been designated a Groundwater Guardian Community annually since 1995 because of the efforts of the Desert Hot Springs Groundwater Guardian Team. The Groundwater Guardian Program is a community educational program that empowers local citizens and communities to take voluntary steps toward protecting their groundwater resources. Sponsored by The Groundwater Foundation in Lincoln, Nebraska, a private non-profit educational organization recognized internationally, the Groundwater Guardian Program recognizes communities that show participatory involvement in protecting their groundwater through result oriented activities.
- Colorado River Regional Sewer Coalition (CRRSCo) – The majority of communities along the Lower Colorado River utilize septic systems for wastewater disposal. Septic systems can pollute ground or surface waters with pathogens and nitrates, particularly if improperly maintained or operated. The CRRSCo is a non-profit organization based in Lake Havasu City that consists of Lower Colorado River communities, local governments, Indian tribes, and related entities. The goal of CRRSCo is to improve water quality in the Lower Colorado River Basin by securing funds to replace septic tanks with sewers and wastewater treatment facilities. The U.S Congress is the

probable source of funding, given the expense of the project. The CRRSCo recently hired an experienced lobbyist to help secure funding. Regional Board staff has attended and continues to participate in CRRSCo's meetings in Lake Havasu City.

H. Monitoring, Assessment, and Reporting

Water quality monitoring and assessment are essential for attaining water quality goals and objectives. This is particularly evident in the Salton Sea Transboundary Watershed, which has five of the six 303(d) listed impaired water bodies in Region 7. Water quality data are needed to:

- Successfully complete TMDLs;
- Assess water quality improvements achieved through implementation of TMDL load allocations;
- Provide a technical basis for recommending water bodies for 303(d) listing or de-listing, and
- Aid in scientific efforts to address restoration of the Salton Sea.

FY 2004-2005 TMDL Monitoring Funds

1. Regional Board Monitoring –Salton Sea Transboundary Watershed Monitoring [BZ1] Program

Although funding was provided to entities in the Region for study of the Salton Sea (e.g. SSA), no contract money was allocated for monitoring water quality pollutants in the Salton Sea Transboundary Watershed due to budget cuts. The Salton Sea Science Subcommittee's draft "Strategic Science Plan," indicates that long-term monitoring activities are primarily funded by cooperative state and federal agencies that use their internal budget processes to address restoration project data needs.

2. Regional Board Monitoring – New River International Pollution Sampling Program

Discharges of wastes from Mexico pose a significant threat to water resources along the U.S. – Mexico Border. Impacted water bodies include the New and Alamo Rivers. The Regional Board is implementing a limited monitoring program to:

- Evaluate the fate and transport of discharges from Mexico to the New River within 60 miles of California;
- Develop control mechanisms (e.g. Basin Plan amendments) to protect California's water resources along the 60-mile border;
- Provide technical information and assistance to planning authorities to ensure that appropriate pollution control measures in Mexico are developed; and
- Work with the U.S. Federal government to ensure that necessary measures are taken to eliminate existing pollution and prevent further degradation of water resources.

3. Volunteer Monitoring

There is interest in developing volunteer monitoring programs in the Salton Sea Transboundary Watershed. The wetlands demonstration project, a "good samaritan" effort to treat agricultural drain water and polluted New River water, will benefit from volunteer monitoring to assess the performance of wetlands in remediating polluted water. Development of self-monitoring protocols and monitoring kits to assess MPs can also profit from volunteer monitoring.

2.2 Lower Colorado River Watershed

A. Area Description

The Lower Colorado River Watershed is located in the southeast corner of California, and includes portions of San Bernardino, Riverside, and Imperial Counties. It is bordered to the east by the Colorado River, to the south by the International Border, and to the west by the New York, Hack Berry, Sacramento, Step Ladder, Turtle, Arica, Granite, Little Maria, McCoy, Mule, Chocolate, and the Cargo Muchacho Mountain Ranges. The Lower Colorado River Watershed is 200 miles long, with a maximum east-west width of 70 miles. The watershed comprises only a small part of the entire Colorado River drainage area, and includes the region south of Lee Ferry (near Glen Canyon Dam). In the U.S., the Colorado River drainage area includes portions of Wyoming, Colorado, Utah, Nevada, Arizona, New Mexico, and California. Desert valleys and low mountains under 5,000 feet in elevation characterize the area. Hydrologic Units in the Lower Colorado River Watershed are listed in Appendix K.

B. Overview of Water Quality Issues

Water quality issues within the Lower Colorado River Watershed include:

- Underground Storage Tanks
- Pathogen impairment of the Palo Verde Outfall Drain;
- Agricultural pollution in the Palo Verde Irrigation District Drainage System, and
- Perchlorate, bacteria, arsenic, selenium, and salt pollution in the Lower Colorado River.

C. Underground Storage Tanks (USTs)

The City of Blythe is a fueling station for traffic from Los Angeles to Phoenix. Blythe covers a relatively small area and has a large number of leaking USTs used for storing petroleum fuel. Most of the petroleum plumes are commingled or in close proximity, complicating independent clean up efforts. To expedite and streamline remediation, the Regional Board's Executive Officer and Blythe's City Manager entered into a Memorandum of Understanding that allowed Blythe to coordinate the cleanup effort. This approach has become a model for remediating commingled plumes throughout the State and inspired the Legislature to enact commingled plume legislation (SB 562).

D. Pathogen Impairment of the Palo Verde Outfall Drain

The Palo Verde Outfall Drain is impaired by pathogens presumably from septic tanks near the Palo Verde Lagoon. Staff has periodically collected water samples from the Lagoon since December 2000 to assess water quality. The draft TMDL staff report was submitted for peer review in April 2003. Source analysis and DNA ribotyping studies indicate that wildlife is the leading contributor of pathogens in the Palo Verde Lagoon.

E. Stakeholder Involvement

Communities along the Colorado River representing three states and two Indian tribes formed a coalition to address pollution from overuse of septic systems by resort parks along the River. The Regional Board does not have regulatory authority on Indian lands, however staff will assist stakeholder groups with pollution abatement approaches, and seeking legislative assistance.

1.3 Desert Aquifers Watershed

A. Area Description

The Desert Aquifers Watershed is located in the Mohave Desert in southeastern California, and includes the "Lucerne Planning Area" and the "Hayfield Planning Area" as discussed in the Basin Plan. The watershed is bordered to the north by the New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountain Ranges; to the east by the New York, Hack Berry, Sacramento, Step Ladder, Turtle, Arica, Granite, Little Maria, McCoy, Mule, and Chocolate Mountain Ranges; to the west by the Ord, Sidewinder, Granite, San Bernardino, San Jacinto, and Laguna Mountain Ranges, and to the south by the San Bernardino, Little San Bernardino, Eagle, Chuckwalla, and Chocolate Mountain Ranges. Hydrologic Units in the Desert Aquifers Watershed are in Appendix K.

B. Ground Water Quality Issues

Agricultural practices, septic systems, and disposal of domestic wastewater through evaporation/percolation ponds by the Big Bear Area Regional Wastewater Agency (BBARWA) are suspected sources of nitrate pollution in Lucerne Valley ground water. The lateral and vertical extent of the plume has not been delineated, however it encompasses several miles and threatens over 15 private

supply wells. Region 7 lacks the funds to develop a comprehensive ground water monitoring program, however staff will assist the BBARWA addressing this issue.